

Appl. No. 10/668,903
Examiner: DUONG, TAI V, Art Unit 2871
In response to the Office Action dated April 23, 2004

Date: June 28, 2004
Attorney Docket No. 10112931

REMARKS

Responsive to the Office Action mailed on April 23, 2004 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 1-8 are pending. Claims 1-5, 7 and 8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Baek (U.S. 2002/0041351). Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Baek in view of Takizawa et al (US 2003/0021000).

In this paper, the specification is amended to correct typographical errors. Claims 1, 3-5 have been amended to more clearly identify novel aspects of the present invention. Support for the amendments can be found on page 9, lines 23-29 and in Fig. 3. New claims 9-12 have been added. Support for the new claims can be found on pages 7-10 of the specification and in Fig. 3.

Reconsideration of this application as amended is respectfully requested in light of the amendments and the remarks contained below.

Rejections Under 35 U.S.C. 102(b)

Claims 1-5, 7 and 8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Baek. To the extent the grounds of the rejection may be applied to claims now pending in this application, they are respectively traversed.

Baek teaches transfective LCDs 100 and 200. Transfective LCD 100 includes upper and lower substrates 143 and 154 and an interposed liquid crystal layer 123. An upper quarter wave plate (QWP) 145 and an upper polarizer 155 are disposed on the outer surface of the upper substrate 143. A lower quarter wave plate (QWP) 142 and a lower polarizer 152 are disposed on the outer surface of the lower surface. See Figs. 6 and paragraphs [0071] and [0072]. Transfective LCD 200 includes upper and lower substrates 217 and 229 and an interposed liquid crystal

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layer 221. An upper QWP 215, an upper HWP 213 and an upper polarizer 211 are formed on the outer surface of the upper substrate 217. A lower QWP 231, a lower HWP 233 and a lower polarizer 237 are formed on the outer surface of the lower substrate 229. See Fig. 9 and paragraphs [0086], [0087] and [0088].

Baek does not teach or suggest a transfective display device wherein the transfective display device as a whole comprises only one half-wave plate (HWP) disposed between the second polarizer and the lower substrate as recited in claim 1.

MPEP 2131 prescribes that to anticipate a claim, a reference must teach every element of the claim. In this regard, the Federal Circuit has held:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claim 1 as amended recites a transfective display device comprising, *inter alia*, a first polarizer having a first transmissive axis disposed on an outer surface of the upper substrate and a second polarizer having a second transmissive axis disposed over an outer surface of the lower substrate; wherein the transfective display device as a whole comprises only one half-wave plate (HWP) disposed between the second polarizer and the lower substrate. The present invention can thus achieve superior display performance at a wide view angle and increase the light recycling rate.

With respect to LCD 100 taught by Baek, it is noted that the QWP 142 is between the lower polarizer 152 and the lower substrate 154, wherein the transfective LCD recited in claim 1 as a whole comprises only one HWP disposed between the lower polarizer and the lower substrate.

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With respect to LCD 200 taught by Baek, it is noted that an upper QWP 215, an upper HWP 213 and an upper polarizer 211 are formed on the outer surface of the upper substrate 217, while a lower QWP 231, a lower HWP 233 and a lower polarizer 237 are formed on the outer surface of the lower substrate 229. In contrast, the transfective LCD as claimed in claim 1 as a whole comprises only one HWP disposed between the lower polarizer and the lower substrate. As the cited reference employs a QWP or a QWP and a HWP disposed between the lower polarizer and the lower substrate, the cited reference is different from the transfective LCD of the present invention.

For at least these reasons, it is Applicant's belief that claim 1 as amended is not anticipated by Baek. Applicant therefore submits that claim 1 is condition for allowance. Insofar as claims 2-8 depend from claim 1, it Applicant's belief that these claims are also allowable.

Baek does not teach or suggest a transfective display device with the features recited in claim 9.

New claim 9 recites a transfective display device, comprising an upper substrate and a lower substrate; a liquid crystal layer comprising liquid crystal molecules interposed between an inner surface of the upper substrate and an inner surface of the lower substrate, wherein the liquid crystal molecules in the liquid crystal layer have a twisting angle of $0^{\circ} \sim 50^{\circ}$; a reflective electrode layer formed overlying the inner surface of the lower substrate to serve as a reflective area of a pixel electrode; a transparent electrode layer formed overlying the inner surface of the lower substrate to serve as a transmissive area of the pixel electrode; a first polarizer having a first transmissive axis disposed on an outer surface of the upper substrate; a second polarizer having a second transmissive axis perpendicular to the first transmissive axis disposed over an outer surface of the lower substrate; and a single optical compensation plate having a phase retardation of $\lambda/2$ disposed between the second polarizer and the lower substrate, wherein said single optical compensation plate has a slow axis disposed at about 45° to the second transmissive axis, and said single optical compensation plate is the only optical compensation plate included in the transfective display device as a whole.

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Support for this claim can be found in Fig. 3 and on page 8, line 20 to page 10, line 19 of the present application, wherein transfective LCD 40 with an optical supplement structure includes the first polarizer 50I, the optical compensation plate 58 and the second polarizer 50II. The optical compensation plate 58 is preferably a half-wave plate (HWP) having a phase retardation of $\lambda/2$. The first polarizer 50I has a transmissive axis (absorption axis) perpendicular to a transmissive axis (absorption axis) of the second polarizer 50II, and the optical compensation plate 58 has a slow axis disposed at about 45° angle to the transmissive axis of the second polarizer 50II. The twisting angle of the LC molecules in the LC layer 46 is $0^\circ \sim 50^\circ$.

The transfective display device recited in claim 9 omits the conventional QWP and/or HWP on the outer surface of the upper substrate; therefore, a wider viewing angle and superior display performance can be achieved. Additionally, the optical compensation plate having a phase retardation of $\lambda/2$ is the only film disposed between the lower substrate and the second polarizer 50, thereby improving light recycling rate.

As neither Baek nor Takizawa et al teach or suggest all the limitations recited in claim 9 of the present invention, it is applicant's belief that the claim 9 is allowable over the cited references. Insofar, as claims 10-12 depend from claim 9, it is applicant's belief that these claims are also allowable.

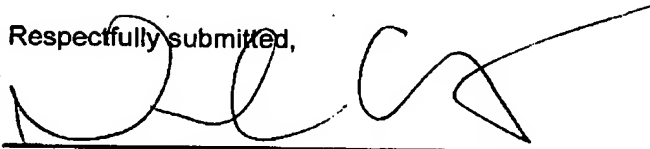
Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so. The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to Deposit Account No. 502447. In particular, if this response is not timely filed, then the commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 C.F.R. § 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to Deposit Account No. 502447.

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Respectfully submitted,



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